CLAIMS

What is claimed is:

Sub ß) 5 / 1.   A method for rendering DVD subpicture data on a computer system having

graphics data without a loss of subpicture resolution including:

inserting a key into said subpicture data to indicate that said data is subpicture

information and not the graphics data;

writing said subpicture data to a primary surface, said primary surface also

10 receiving said graphics data;

reading data out of said primary surface;

determining if said data read out of said primary surface is subpicture data or

graphics data by looking for said key in said data;

converting said subpicture data to an RGB value and an alpha value and blending

15 said RGB value with DVD video data according to said alpha value if said data is

subpicture data; and

combining said graphics data with said DVD video data if said data is graphics

data.

20   2.   The method of claim 1, wherein said primary surface is in 24-bit RGB mode.

3.   The method of claim 2, wherein said subpicture data has 8 bits.

17

4.   The method of claim 3, wherein said inserting includes inserting a 16-bit key into said subpicture data to indicate that said data is subpicture information and not the graphics data.

5

5.   The method of claim 4, wherein said 16-bit key is inserted into bits spread evenly among said 24 bits.

6.   The method of claim 2, wherein said determining includes examining 16 bits of

10   said data and comparing said 16 bits with a 16 bit combination reserved to indicate subpicture data.

7.   The method of claim 1, wherein said primary surface is in 16-bit 565 RGB mode.

15   8.   The method of claim 7, wherein said subpicture data has 8 bits.

9.   The method of claim 8, wherein said inserting includes inserting an 8-bit key into said subpicture data to indicate that said data is subpicture information and not the graphics data.

20

10.   The method of claim 9, wherein said 8-bit key is inserted into bits spread evenly among said 16 bits.

11.   The method of claim 9, wherein said determining includes examining 8 bits of said data and comparing said 8 bits with a 8 bit combination reserved to indicate subpicture data.

5

12.   The method of claim 1, wherein said primary surface is in 16-bit 555 RGB mode, wherein said 16-bit 555 RGB mode provides 5 bits for red information, 5 bits for green information, 5 bits for blue information, and 1 empty bit.

10   13.   The method of claim 12, wherein said subpicture data has 8 bits.

14.   The method of claim 13, wherein said inserting includes inserting an 1-bit key into the empty bit of said subpicture data to indicate that said data is subpicture information and not the graphics data.

15

15.   The method of claim 12, wherein said determining includes examining 1 bit of said data and comparing said 1 bit with a 1 bit combination reserved to indicate subpicture data.

20   16.   The method of claim 1, wherein said combining includes creating an alpha value based on whether said graphics data represents a color set aside as a key color and combining said graphics data and said DVD video data according to said alpha value.

17.   A method for rendering DVD subpicture data on a computer system having

graphics data without a loss of subpicture resolution including:

5   inserting a key into said subpicture data to indicate that said data is subpicture

information and not the graphics data; and

writing said subpicture data to a primary surface, said primary surface also

receiving said graphics data.

10   18.   A DVD subpicture data renderer including:

a memory having a primary surface and a video surface;

a key inserter;

a subpicture data writer coupled to said key inserter and coupled to said primary

surface;

15   a primary surface reader coupled to said primary surface;

a subpicture key select block coupled to said primary surface reader;

a subpicture detector coupled to said subpicture key select block;

an index select block coupled to said primary surface reader;

a subpicture palette coupled to said index select block;

20   an alpha select block coupled to said primary surface reader;

a multiplexor having a plurality of inputs and an output, one of said inputs coupled

to said alpha select block and another of said inputs coupled to said subpicture detector;

a video surface reader coupled to said video surface; and

an alpha blender coupled to said subpicture palette, said multiplexor, and said

video surface reader.

5   19.   The DVD subpicture data renderer of claim 18, further including a color and

chroma key detect block coupled to said primary surface reader, said video surface

reader, and said alpha blender.

20.   The DVD subpicture data renderer of claim 18, wherein said primary surface

10   reader is contained in a graphics engine on a graphics chip.

21.   The DVD subpicture data renderer of claim 18, wherein said video surface reader

is contained in a video engine on a graphics chip.

15   22.   A DVD subpicture data renderer including:

a memory having a primary surface and a video surface;

a key inserter; and

a subpicture data writer coupled to said key inserter and coupled to said primary

surface.

20

23.   A DVD subpicture data renderer including:

a memory having a primary surface and a video surface;

a key inserter; and

a subpicture data writer coupled to said key inserter and coupled to said primary

surface.

5   24.   A program storage device readable by a machine, tangibly embodying a program

of instructions executable by the machine to perform a method for rendering DVD

subpicture data on a computer system having graphics data without a loss of subpicture

resolution, the method including:

inserting a key into said subpicture data to indicate that said data is subpicture

10   information and not the graphics data;

writing said subpicture data to a primary surface, said primary surface also

receiving said graphics data;

reading data out of said primary surface;

determining if said data read out of said primary surface is subpicture data or

15   graphics data by looking for said key in said data;

converting said subpicture data to an RGB value and an alpha value and blending

said RGB value with DVD video data according to said alpha value if said data is

subpicture data; and

combining said graphics data with said DVD video data if said data is graphics

20   data.

25.   A program storage device readable by a machine, tangibly embodying a program

of instructions executable by the machine to perform a method for rendering DVD

subpicture data on a computer system having graphics data without a loss of subpicture

5   resolution, the method including:

inserting a key into said subpicture data to indicate that said data is subpicture

information and not the graphics data; and

writing said subpicture data to a primary surface, said primary surface also

receiving said graphics data.